

Application No.: 10/804,623
Attorney Docket No.: 25406A

Remarks

Support for the above-requested amendments to claims 1 and 11 is found at least at paragraphs [0034] – [0036] of the original specification. Claim 3 has been amended to change grammatical phraseology and the amendment was not made for purposes related to patentability. New claim 21 is supported at least by paragraph [0034] and original claim 1. Support for new claims 22 – 25 is found at least in paragraphs [0034] – [0035]. New claim 22 and 24 are also supported by original claims 1 and 11 respectively. New claims 23 and 25 are also supported by original claim 3. Claims 2 and 17 - 20 have been canceled without prejudice. No question of new matter arises and entry of the amendments and new claims is respectfully requested.

Claims 1, 2 – 16, and 21 – 25 are before the Examiner for consideration.

Objection to Claims 1 and 3

Claims 1 and 3 have been objected to because the Examiner asserts that the term “copolymerizable” should be replaced with the term “copolymerized” to indicate that the claimed material is a copolymerizate.

In response to this objection, Applicants respectfully submit that as amended, claim 1 no longer contains the term “copolymerizable”, and, as a result, the objection to claim 1 is rendered moot. With respect to claim 3, Applicants have amended the claim to replace “copolymerizable” with “copolymerized” as suggested by the Examiner. In view of the above, Applicants respectfully submit that this objection be reconsidered and withdrawn.

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Rejection under 35 U.S.C. §102(b)

Claims 1, 2, 4 – 9, 11 – 14, and 16 – 20 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,945,134 to Strait *et al.* ("Strait"). The Examiner asserts that Strait discloses an aqueous precursor sizing composition for treating glass fibers that includes coupling agents, lubricants, and a non-ionic surfactant or wetting agent. The Examiner also asserts that Strait teaches that after the fibers have been treated with the sizing composition, the fibers are sized with a second composition that contains a binder and other components such as wetting agents, film formers, coupling agents, and lubricants. The Examiner specifically makes reference to a binder composition presented in a table in column 6 that contains a partial ammonium salt of a butadiene-maleic anhydride copolymer (*i.e.*, Maldene 286). Further, the Examiner asserts that the sized glass fibers can be made into pellets which can then be used to form composite articles.

With respect to claims 2 and 17 – 20, Applicants have canceled these claims without prejudice and therefore respectfully submit that the rejection to these claims has been rendered moot.

In response to the rejection of claims 1, 4 – 9, 11 – 14, and 16, Applicants respectfully direct the Examiner's attention to the amendments made to independent claims 1 and 11 and submit that claims 1 and 11 as amended define a novel, two-part sizing composition (claim 1) and a reinforcing fiber product that contains a fiber material coated with a novel two-part sizing composition (claim 11) that are not taught or suggested by Strait. In particular, Applicants respectfully submit that Strait does not teach or suggest a two-part sizing composition that contains (1) a size composition and (2) a binder composition that includes a copolymer formed from maleic anhydride and butadiene or an anhydride, acid, half-ester, or half-amide derivative of the copolymer as recited in claims 1 and 11.

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Strait teaches applying a size composition to glass fibers after the fibers are formed and prior to their collection into a strand. (*See, e.g.*, column 4, lines 10 – 12). The size composition may be a size composition such known to those of skill in the art, and preferably consists of water, coupling agents, lubricants, and/or pH adjusters. (*See, e.g.*, column 4, lines 12 – 15). After chopping the strands, a hydrating fluid is added to hydrate the chopped strand segments to a level that is suitable for the formation of pellets. (*See, e.g.*, column 5, lines 36 – 43). The hydrating fluid desirably contains a binder or second sizing composition. (*See, e.g.*, column 5, lines 59 – 60). Examples of binder compositions are disclosed in the table set forth in column 6; however, none of the binder compositions taught by Strait disclose or suggest the binder compositions claimed in independent claims 1 and 11. In particular, there is no teaching or suggestion within Strait of a binder composition that includes a copolymer formed from maleic anhydride and butadiene or an anhydride, acid, half-ester, or half-amide derivative of the copolymer.

To be an anticipatory reference, each and every element of the claimed invention must be found within the four corners of the cited reference. Because Strait does not teach each and every element of the two-part size composition claimed in amended claims 1 and 11, Strait cannot be an anticipatory reference. As such, Applicants submit that independent claims 1 and 11 are patentably distinguishable over Strait. In addition, because claims 3 – 10 and newly added claim 21 are dependent upon claim 1, and claims 12 – 16 are dependent upon claim 11, which, as discussed above, are not taught or suggested by Strait, Applicants submit that claims 3 – 10, 12 – 16, and new claim 21 are also not taught or suggested by Strait. As such, claims 1, 3 – 16, and 21 are submitted to be non-anticipatory, non-obvious, and patentable.

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With respect to newly added claims 22 – 25, Applicants submit that Strait does not teach or suggest a two-part sizing composition that includes (1) a size composition and (2) a binder composition that includes a copolymer formed from maleic anhydride and ethylene-ethylacrylate or a derivative of the copolymer (claim 22) or a reinforcing fiber product that includes (1) a size composition and (2) a binder composition that includes a copolymer formed from maleic anhydride and ethylene-ethylacrylate or a derivative of the copolymer (claim 24). Accordingly, Applicant respectfully submits that newly added independent claims 22 and 24, and all claims dependent therefrom, are patentably distinguishable over Strait.

In view of the above, Applicants submit that the present invention is not anticipated by (or obvious over) Strait and respectfully request that this rejection be reconsidered and withdrawn.

Rejection under 35 U.S.C. §103(a)

Claims 10 and 15 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Strait in view of U.S. Patent No. 5,811,480 to Kirchmeyer *et al.* ("Kirchmeyer"). The Examiner admits that Strait is silent as to the type of glass used in the production of the glass fiber. The Examiner asserts that Kirchmeyer teaches that E-, A-, C-, and S-glasses are used conventionally for the production of glass fibers. The Examiner concludes that it would have been obvious to one of skill in the art to use the sizing composition of Strait to treat the glass fibers of Kirchmeyer.

In response to this rejection, Applicants respectfully direct the Examiner's attention to the argument set forth above with respect to the rejection of claims 1, 2, 4 – 9, 11 – 14, and 16 – 20 over Strait. As discussed above, Strait does not teach or suggest a two-part sizing

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composition that contains (1) a size composition and (2) a binder composition that includes a copolymer formed from maleic anhydride and butadiene or an anhydride, acid, half-ester, or half-amide derivative of the copolymer as recited in amended independent claims 1 and 11. Because claims 10 and 15 are dependent on independent claims 1 and 11 respectively, which, as discussed above, are not taught or suggested by Strait, claims 10 and 15 are submitted to be non-obvious and patentable.

Furthermore, Kirchmeyer adds nothing to the teachings of the Strait to meet the features of the invention as claimed. Kirchmeyer teaches a one-part size composition that contains (1) polyepoxide, polyester, polyvinyl acetate or polyurethane film formers, (2) organo-functional silanes, (3) monomeric, aromatic, di-, or polycarboxylic acids, (4) conventional size constituents that do not contain polyolefin dispersions or emulsions, and (5) water. (*See, e.g.*, Abstract, column 1, line 57 – column 2, line 9, and column 2, lines 51 – 65). There is absolutely no teaching or suggestion within Kirchmeyer of a two-part sizing composition, and especially no teaching of a two-part sizing composition that includes a size composition and a binder composition that contains a copolymer formed from maleic anhydride and butadiene or an anhydride, acid, half-ester, or half-amide derivative of the copolymer as recited in amended claims 1 and 11.

In view of the above, Applicants submit that the present invention is not taught or suggested by Strait and/or Kirchmeyer and respectfully request that this rejection be reconsidered and withdrawn.

Conclusion

In light of the above, Applicants believe that this application is now in condition for allowance and, therefore, request favorable consideration.

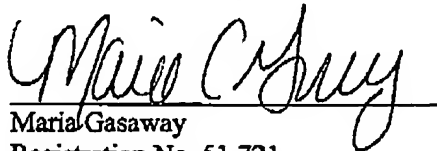
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If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

If necessary, the Commissioner is hereby authorized to charge payment or credit any overpayment to Deposit Account No. 50-0568 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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